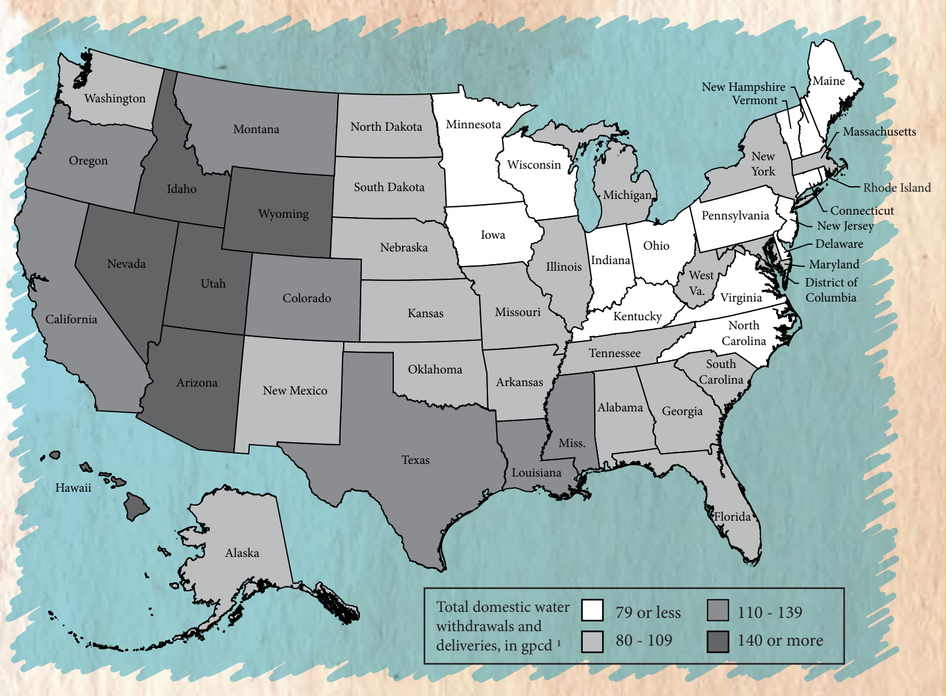
WATER $AVINGS in the SOUTHEAST

UNC ENVIRONMENTAL FINANCE CENTER

Compiled by Ryan Kurtzman

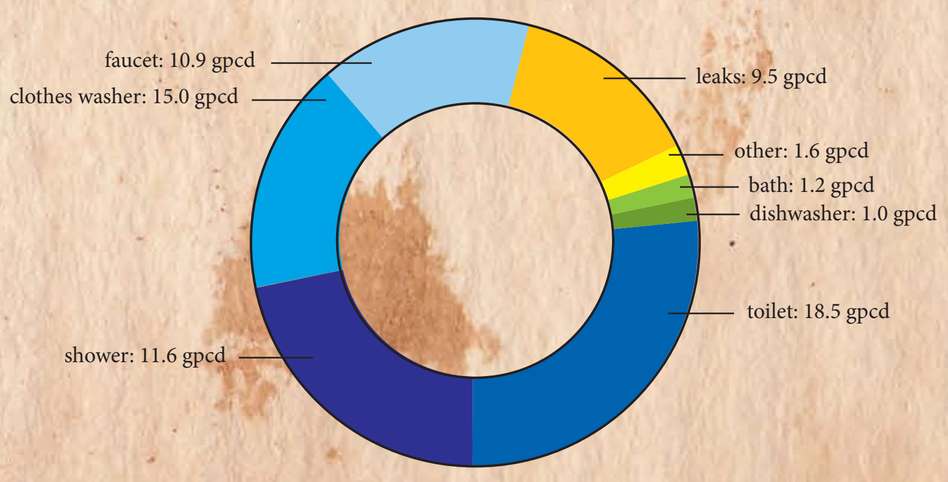
Water efficiency is often the most cost-effective and environmentally sound way to stretch supplies farther, reduce demand, and save money on monthly utility bills. The following analysis summarizes financial savings associated with water conservation in the Southeast.

Total domestic water use in the United States



Domestic water use by location

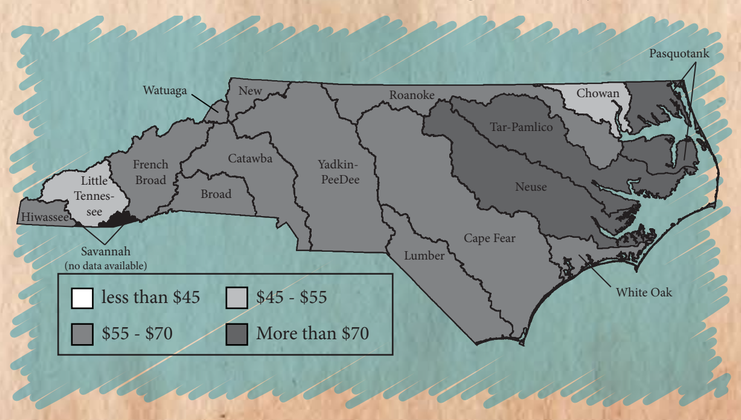
Indoor water use by plumbing fixture or appliance



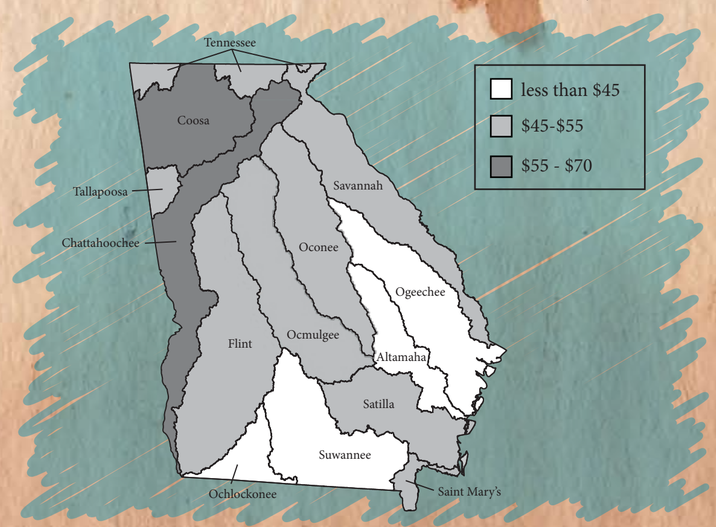
The Environmental Finance Center (EFC) at the University of North Carolina conducts annual water and wastewater rates surveys for all local government and nonprofit utility service providers in the states of North Carolina and Georgia. The following information is based on those surveys.

NORTH CAROLINA	state	GEORGIA
6.5 million	population served by local government utilities	8 million
70 gal	domestic per capita use per day	93 gal
488	number of local government utilities	530
$28.02	median cost of water bills per household [2]	$22.50
$60.00	median cost of water and wastewater bills per household [2]	$48.25
50%	residential population with increasing block rates	80%
2.33% of Median Household Income Spent on Water and Wastewater Bills	affordability [3]	1.69% of Median Household Income Spent on Water and Wastewater Bills

NC: Median water and wastewater bills at 5,000 gal/month, by river basin

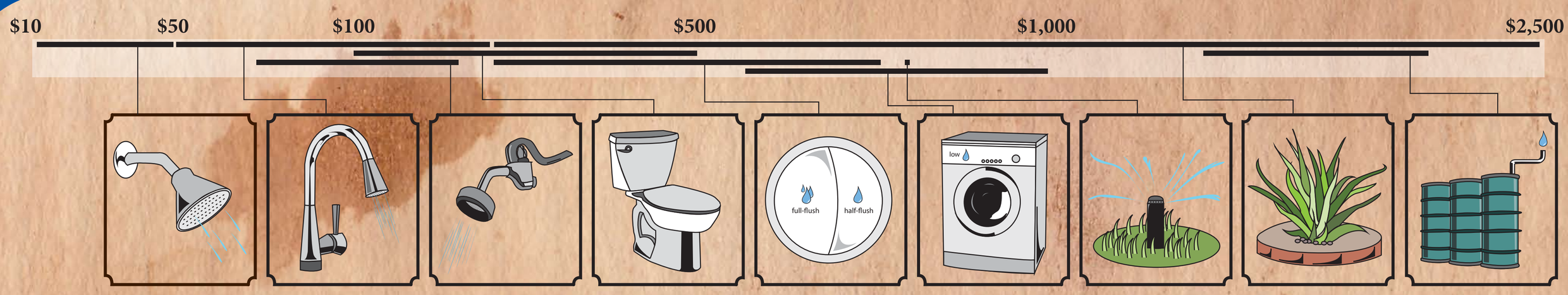


GA: Median water and wastewater bills at 5,000 gal/month, by river basin



IN DEPTH: Nine Water Saving Technologies

Below are nine examples of common, water saving technologies ranging from least expensive to most expensive in terms of in terms of upfront cost.



Technology:	LOW-FLOW SHOWERHEAD	LOW-FLOW FAUCET	COMMERCIAL DISH SPRAYER	LOW-FLOW TOILET	DUAL-FLUSH TOILET *full flush*	DUAL-FLUSH TOILET *reduced flush*	LOW-WATER WASHING MACHINE	SMART IRRIGATION [4]	XERISCAPING	RAINWATER CISTERNS (1500 gal)
Cost to Install:	$10-$50	$50-250	$75-$200	$100-$500	$250-$750		$600-$1,000	$771	$250-$2,500	$1,500-$2,000
Old Tech Water Use:	2.2 gpm	2.0 gpm	3.25 gpm	3.5 gpf	3.5 gpf		27 gpl	---	---	---
New Tech Water Use:	1.7 gpm	1.0 gpm	1.60 gpm	1.28 gpf	1.6 gpf	0.8 gpf	14 gpl	---	---	---
Per Use Savings:	2.65 gal	1.0 gal	0.55 gal	2.22 gal	1.9 gal	2.7 gal	13.0 gal	---	---	---
Customer Savings/Year: [5]	2,519 gal	7,805 gal	49,938 gal	10,760 gal	11,795 gal		4,635 gal	10,800 gal	14,760 gal	22,320 gal
Median Savings/Year (NC): [6]	$21.48	$66.60	$447.24	$91.68	$100.24		$39.48	$43.08	$58.32	$84.84
Median Savings/Year (GA): [6]	$15.24	$47.28	$327.48	$65.04	$71.40		$28.08	$32.34	$43.56	$64.08
Assumptions:	One 5.3 min shower/day/person	---	20 seconds/use, 84.07 min of use/day	5.1 uses/day/person	Average use based on two reduced flushes and one full flush		1 use/day/household	30 % reduction in monthly water usage ("Smart Irr.")	41% reduction in monthly water usage (Vickers)	see notes [7]

Top Places to Install Water Saving Technologies

Below are price ranges of savings from utility providers in North Carolina and Georgia that offer the five largest savings per year for installing water saving technologies based on money saved on yearly water and wastewater bills.

Top 5: Residential Technologies

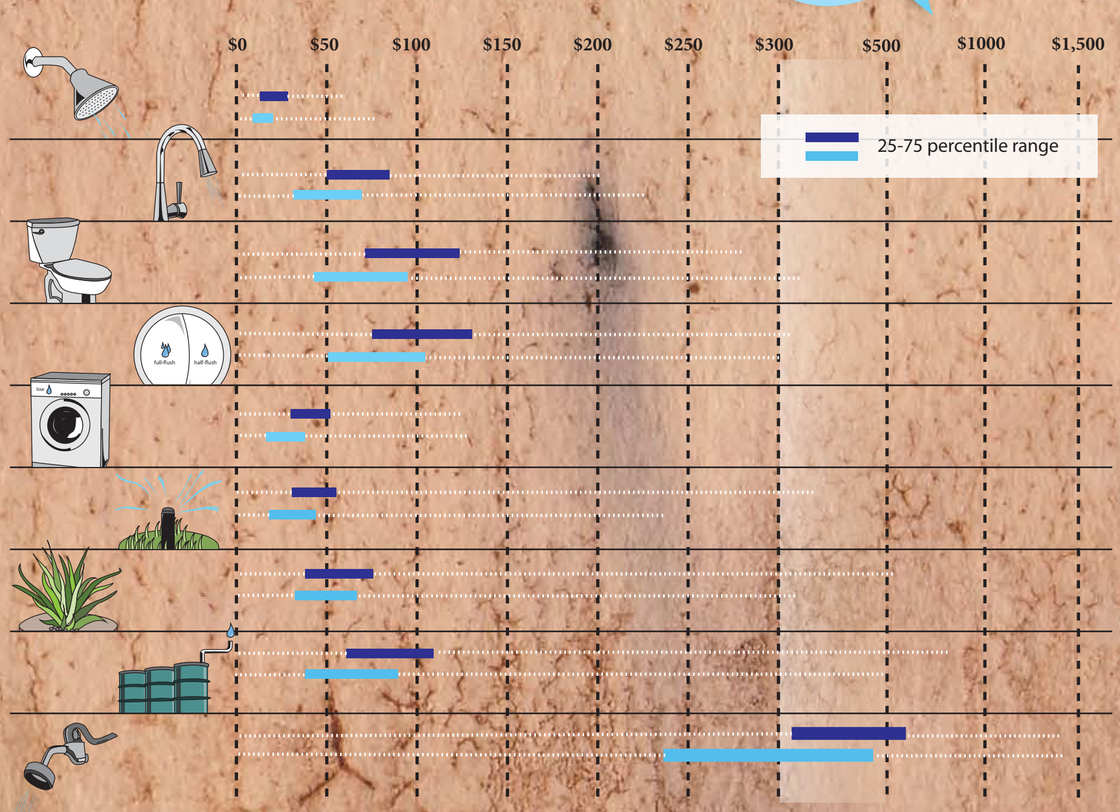
1. Franklinton	1. Atlanta
2. Kill Devil Hills	2. Mountain Park
3. Green Level	3. Lumpkin Co.
4. Stanley	4. Madison Co.
5. Bath	5. Polk Co. - Vinson Mtn.

Top 5: Irrigation Technologies

1. West Carteret	1. Roswell
2. Franklinton	2. Sky Valley
3. Creedmoor	3. Fairburn
4. Sanford-Lee Co.	4. Lumpkin Co.
5. Youngsville	5. Stockbrige

Top 5: Commercial Technologies

1. Parkton	1. Atlanta
2. Stanley	2. Mountain Rock
3. Franklinton	3. Hoschton
4. Green Level	4. Lumpkin Co.
5. Kill Devil Hills	5. Hampton



SOURCES/NOTES

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(1) gpcd = gallons per capita per day

(2) Median cost assumes usage of 5,000 gal/month

(3) Affordability of water and wastewater bills is measured as a fraction of the percentage of median household income (MHI) spent on water and wastewater bills across all combined utilities' service areas. MHI data from 2010 census.

(4) Smart Irrigation refers to residential customers installing separate irrigation meters and smart controllers that automatically adjust to plant and site conditions, meaning that sprinkers do not come on when it is raining, if rain is forecasted, or if the ground is sufficiently saturated. The price of $771 comes from the single service line fee from Charlotte-Mecklenburg Utilities.

(5) Household savings were calculated assuming 2.64 persons per household

(6) Yearly savings for residential and commercial technologies were computed by multiplying monthly savings by 12, while savings for irrigation technologies were computed by multiplying monthly savings by 6, due to the shortened irrigation season. Starting monthly consumption points were as follows: Residential Indoor = 5,000 gal/month, Irrigation = 6,000 gal/month, Commercial = 20,000 gal/month

(7) Based on rule of thumb calculation that 1000 sq. ft. of roof at 1" rain per month = 620 gallons saved per month. We assumed average U.S. rooftop size of 1,500 sq. ft, 4" of rainfall per month in the SE U.S. and a slick roof with 100 % retention of water.